

-- 90. A compound having the formula:



X<sup>2</sup> is -C(O)-NH-;

R is hydrogen or alkyl;

$R^2$  and  $R^3$  are independently hydrogen, alkyl, cycloalkyl, aryl, or  $-CH_2-R^5$ ;

$R^5$ , in each instance, is one of aryl, aralkyl, alkaryl, cycloalkyl, quinolinyl, pyridyl, indolyl, or  $-W-R^6$ , where  $W$  is a chalcogen and  $R^6$  is alkyl;

where the ring portion of any of said aryl, aralkyl, or alkaryl in R<sup>2</sup>, R<sup>3</sup> and R<sup>5</sup> can be optionally substituted by one or two substituents independently selected from the group consisting of C<sub>1-6</sub> alkyl, C<sub>3-8</sub> cycloalkyl, C<sub>1-6</sub> alkyl(C<sub>3-8</sub>)cycloalkyl, C<sub>2-8</sub> alkenyl, C<sub>2-8</sub> alkynyl, cyano, amino, C<sub>1-6</sub> alkylamino, di(C<sub>1-6</sub>)alkylamino, benzylamino, dibenzylamino, nitro, carboxy, carbo(C<sub>1-6</sub>)alkoxy, trifluoromethyl, halogen, C<sub>1-6</sub> alkoxy, C<sub>6-10</sub> aryl, C<sub>6-10</sub> aryl(C<sub>1-6</sub>)alkyl, C<sub>6-10</sub> aryl(C<sub>1-6</sub>)alkoxy, hydroxy, C<sub>1-6</sub> alkylthio, C<sub>1-6</sub> alkylsulfinyl, C<sub>1-6</sub> alkylsulfonyl, C<sub>6-10</sub> arylthio, C<sub>6-10</sub> arylsulfinyl, C<sub>6-10</sub> arylsulfonyl, C<sub>6-10</sub> aryl, C<sub>1-6</sub> alkyl(C<sub>6-10</sub>)aryl, and halo(C<sub>6-10</sub>)aryl;

*A1*  
*cancel*

$Z^1$  and  $Z^2$  are independently one of hydroxy, alkoxy, or aryloxy, or together  $Z^1$  and  $Z^2$  form a moiety derived from a dihydroxy compound having at least two hydroxy groups separated by at least two connecting atoms in a chain or ring, said chain or ring comprising carbon atoms, and optionally, a heteroatom or heteroatoms which can be N, S, or O; and  
A is zero.

91. A compound of claim 90, wherein:

P is one of quinolinecarbonyl, pyridinecarbonyl, quinolinesulfonyl, quinoxalinecarbonyl, quinoxalinesulfonyl, pyrazinecarbonyl, pyrazinesulfonyl, furancarbonyl, furansulfonyl or N-morpholinylcarbonyl;

A is zero;

$X^2$  is  $-C(O)-NH-$ ;

R is hydrogen or  $C_{1-8}$  alkyl;

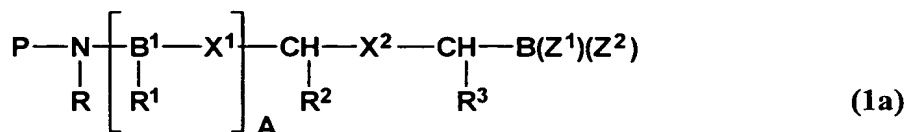
$R^2$  and  $R^3$  are each independently one of hydrogen,  $C_{1-8}$  alkyl,  $C_{3-10}$  cycloalkyl,  $C_{6-10}$  aryl, or  $C_{6-10}ar(C_{1-6})$  alkyl; and

$Z^1$  and  $Z^2$  are both hydroxy,  $C_{1-6}$  alkoxy, or  $C_{6-10}$  aryloxy, or together  $Z^1$  and  $Z^2$  form a moiety derived from a dihydroxy compound selected from the group consisting of pinacol, perfluoropinacol, pinanediol, ethylene glycol, diethylene glycol, 1,2-cyclohexanediol, 1,3-propanediol, 2,3-butanediol, glycerol or diethanolamine.

92. The compound of claim 91, wherein P is 2-pyrazinecarbonyl, 8-quinolinesulfonyl or N-morpholinoyl.

19  
93.

A compound having the formula:



or a pharmaceutically acceptable salt thereof;

wherein

P is  $\text{R}^7-\text{C}(\text{O})-$  and  $\text{R}^7$  is pyrazinyl;

$\text{X}^2$  is  $-\text{C}(\text{O})-\text{NH}-$ ;

R is hydrogen or alkyl;

$\text{R}^2$  and  $\text{R}^3$  are independently hydrogen, alkyl, cycloalkyl, aryl, or  $-\text{CH}_2-\text{R}^5$ ;

$\text{R}^5$ , in each instance, is one of aryl, aralkyl, alkaryl, cycloalkyl, or  $-\text{W}-\text{R}^6$ , where W is a chalcogen and  $\text{R}^6$  is alkyl;

where the ring portion of any of said aryl, aralkyl, or alkaryl in  $\text{R}^2$ ,  $\text{R}^3$  and  $\text{R}^5$  can be optionally substituted by one or two substituents independently selected from the group consisting of  $\text{C}_{1-6}$  alkyl,  $\text{C}_{3-8}$  cycloalkyl,  $\text{C}_{1-6}$  alkyl( $\text{C}_{3-8}$ )cycloalkyl,  $\text{C}_{2-8}$  alkenyl,  $\text{C}_{2-8}$  alkynyl, cyano, amino,  $\text{C}_{1-6}$  alkylamino, di( $\text{C}_{1-6}$ )alkylamino, benzylamino, dibenzylamino, nitro, carboxy, carbo( $\text{C}_{1-6}$ )alkoxy, trifluoromethyl, halogen,  $\text{C}_{1-6}$  alkoxy,  $\text{C}_{6-10}$  aryl,  $\text{C}_{6-10}$  aryl( $\text{C}_{1-6}$ )alkyl,  $\text{C}_{6-10}$  aryl( $\text{C}_{1-6}$ )alkoxy, hydroxy,  $\text{C}_{1-6}$  alkylthio,  $\text{C}_{1-6}$  alkylsulfinyl,  $\text{C}_{1-6}$  alkylsulfonyl,  $\text{C}_{6-10}$  arylthio,  $\text{C}_{6-10}$  arylsulfinyl,  $\text{C}_{6-10}$  arylsulfonyl,  $\text{C}_{6-10}$  aryl,  $\text{C}_{1-6}$  alkyl( $\text{C}_{6-10}$ )aryl, and halo( $\text{C}_{6-10}$ )aryl;

$\text{Z}^1$  and  $\text{Z}^2$  are independently one of hydroxy, alkoxy, or aryloxy, or together  $\text{Z}^1$  and  $\text{Z}^2$  form a moiety derived from a dihydroxy compound having at least two hydroxy groups

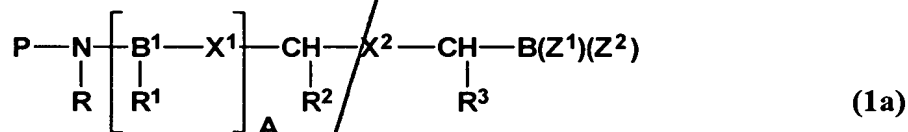
T.12904

Al  
Antet

separated by at least two connecting atoms in a chain or ring, said chain or ring comprising carbon atoms, and optionally, a heteroatom or heteroatoms which can be N, S, or O; and

A is zero.

94. A compound having the formula:



or a pharmaceutically acceptable salt thereof;

wherein

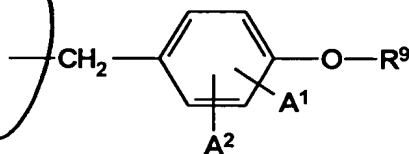
A is zero;

P is one of  $\text{R}^7-\text{C}(\text{O})-$ , or  $\text{R}^7-\text{SO}_2-$ ,  $\text{R}^7-\text{NH}-\text{C}(\text{O})-$  or  $\text{R}^7-\text{O}-\text{C}(\text{O})-$ ;

$\text{R}^7$  is one of quinolinyl, quinoxaliny, pyridyl, pyrazinyl, furanyl or pyrrolyl, or when P is  $\text{R}^7-\text{C}(\text{O})-$ ,  $\text{R}^7$  can also be N-morpholinyl;

$\text{X}^2$  is  $-\text{C}(\text{O})-\text{NH}-$

$\text{R}^2$  is:



where

$\text{A}^1$  and  $\text{A}^2$  are independently one of hydrogen,  $\text{C}_{1-6}$  alkyl, halogen, monohalo ( $\text{C}_{1-6}$ ) alkyl or trifluoromethyl;

110

*Al*  
*Case*  
R<sup>9</sup> is one of hydrogen, C<sub>1-8</sub>alkyl, phenyl, benzyl, phenethyl or pyridylmethyl;

R is hydrogen or alkyl;

R<sup>3</sup> is C<sub>1-6</sub>alkyl; and

Z<sup>1</sup> and Z<sup>2</sup> are both hydroxy, C<sub>1-6</sub>alkoxy, or C<sub>6-10</sub>aryloxy, or together Z<sup>1</sup> and Z<sup>2</sup> form a moiety derived from a dihydroxy compound selected from the group consisting of pinacol, perfluoropinacol, pinanediol, ethylene glycol, diethylene glycol, 1,2-cyclohexanediol, 1,3-propanediol, 2,3-butanediol, glycerol or diethanolamine. --

Kindly amend claims 2, 5, 11-18, 20-24 and 63-66 as follows:

*///*  
Kindly amend claims 2, 5, 11, 13, 14, 15, 16, 20, 21 and 23, line 1 of each claim, by deleting "claim 1" and inserting -- claim 90 -- therefor.

*AD*  
~~12.~~ (amended)

The compound of claim [1] ~~90~~, wherein:

[R<sup>1</sup>, at each occurrence, and] R<sup>2</sup> and R<sup>3</sup> are each independently one of hydrogen, C<sub>1-8</sub>alkyl, C<sub>3-10</sub>cycloalkyl, or C<sub>6-10</sub>aryl, [a 5-, 6-, 9- or 10- membered heteroaryl group,] or -CH<sub>2</sub>-R<sup>5</sup>;

R<sup>5</sup>, in each instance, is one of C<sub>6-10</sub>aryl, C<sub>6-10</sub>ar(C<sub>1-6</sub>)alkyl, C<sub>1-6</sub>alk(C<sub>6-10</sub>)aryl, C<sub>3-10</sub>cycloalkyl, C<sub>1-8</sub>alkoxy, or C<sub>1-8</sub>alkylthio [or a 5-, 6-, 9- or 10- membered heteroaryl group];

where the ring portion of any of said aryl, aralkyl, or alkaryl [or 5-, 6-, 9- or 10- membered heteroaryl] groups of [R<sup>1</sup>,] R<sup>2</sup>, R<sup>3</sup> and R<sup>5</sup> can be optionally substituted by one or two substituents independently selected from the group consisting of C<sub>1-6</sub>alkyl, C<sub>3-8</sub>cycloalkyl, C<sub>1-6</sub>alkyl(C<sub>3-8</sub>)cycloalkyl, C<sub>2-8</sub>alkenyl, C<sub>2-8</sub>alkynyl, cyano, amino, C<sub>1-6</sub>alkylamino,

*///*

AS  
cont

di(C<sub>1-6</sub>)alkylamino, benzylamino, dibenzylamino, nitro, carboxy, carbo(C<sub>1-6</sub>)alkoxy, trifluoromethyl, halogen, C<sub>1-6</sub>alkoxy, C<sub>6-10</sub>aryl, C<sub>6-10</sub>aryl(C<sub>1-6</sub>)alkyl, C<sub>6-10</sub>aryl(C<sub>1-6</sub>)alkoxy, hydroxy, C<sub>1-6</sub>alkylthio, C<sub>1-6</sub>alkylsulfinyl, C<sub>1-6</sub>alkylsulfonyl, C<sub>6-10</sub>arylthio, C<sub>6-10</sub>arylsulfinyl, C<sub>6-10</sub>arylsulfonyl, C<sub>6-10</sub>aryl, C<sub>1-6</sub>alkyl(C<sub>6-10</sub>)aryl, and halo(C<sub>6-10</sub>)aryl.

A3  
Sub  
B3

17. (amended) The compound of claim [1] 90, wherein R<sup>2</sup> is one of isobutyl, 1-naphthylmethyl, 2-naphthylmethyl, 3-pyridylmethyl, 2-pyridylmethyl, 6-quinolinylmethyl, 3-indolylmethyl, benzyl, 4-fluorobenzyl, 4-hydroxybenzyl, [4-(2'-pyridylmethoxy)benzyl,] 4-(benzyloxy)benzyl, benzyl, naphthylmethyl or phenethyl.

12  
18. (amended) The compound of claim [1] 90, wherein Z<sup>1</sup> and Z<sup>2</sup> are independently one of [C<sub>1-6</sub>alkyl,] hydroxy, C<sub>1-6</sub>alkoxy, or C<sub>6-10</sub>aryloxy.

A4  
Sub  
B4

22. (amended) The compound of claim [1] 90, wherein:  
P is one of 8-quinolinecarbonyl, 8-quinolinesulfonyl, 2-quinoxalinecarbonyl, 2-quinoxalinesulfonyl, 2-pyrazinecarbonyl, 2-pyrazinesulfonyl, 3-pyridinecarbonyl, 3-pyridinesulfonyl, 3-furancarbonyl, 3-furansulfonyl or N-morpholinecarbonyl;

A is zero;

X<sup>2</sup> is -C(O)-NH-;

R is hydrogen or C<sub>1-8</sub> alkyl;

R<sup>3</sup> is isobutyl;

R<sup>2</sup> is one of isobutyl, 1-naphthylmethyl, 2-naphthylmethyl, 3-pyridylmethyl, 2-pyridylmethyl, 6-quinolinylmethyl, 3-indolylmethyl, benzyl, 4-fluorobenzyl,

112

4-hydroxybenzyl, [4-(2'-pyridylmethoxy)benzyl,] 4-(benzyloxy)benzyl, benzylnaphthylmethyl or phenethyl; and

*A4*  
*6/10/08*  
Z<sup>1</sup> and Z<sup>2</sup> are independently one of hydroxy, C<sub>1-6</sub>alkoxy, C<sub>6-10</sub>aryloxy, or together Z<sup>1</sup> and Z<sup>2</sup> form a moiety derived from a dihydroxy compound selected from the group consisting of pinacol, perfluoropinacol, pinanediol, ethylene glycol, diethylene glycol, 1,2-cyclohexanediol, 1,3-propanediol, 2,3-butanediol, glycerol or diethanolamine.

*A5*  
*18*  
*24* (amended) The compound [of claim *17* 23, wherein said compound is] *N*-(2-pyrazine)carbonyl-L-phenylalanine-L-leucine boronic acid, or a [an isostere,] pharmaceutically acceptable salt or boronate ester thereof.

*A6*  
*20*  
*63* (amended) A pharmaceutical composition, comprising a compound of [claims 1, 25, 33, 43, 51, 58 or 61,] *claim 90* *1* or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier or diluent.

*21*  
*64* (amended) A pharmaceutical composition, comprising a compound of [claims 22, 28, 41, 49, 55, 60 and 62] *claim 93* *19* or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier or diluent.

[  
65. (amended) A pharmaceutical composition, comprising a compound of [claims 23, 32, 42, 50, 56 and 57] *claim 94* *18* or a [an isostere,] pharmaceutically acceptable salt [or boronate ester] thereof, and a pharmaceutically acceptable carrier or diluent.